A Park Stage

Autos (1917) now admitted

YELLOWSTONE NATIONAL PARK

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Lecturer and Traveler

THE MENTOR · · SERIAL NUMBER 83

MENTOR GRAVURES

GREAT FALLS AND POINT LOOKOUT, GOLDEN GATE, JUPITER TERRACE, OLD FAITHFUL GEYSER, CLEOPATRA TERRACE, FISHING CONE-YELLOWSTONE LAKE.

THE United States government gave the Yellowstone country to the people "for their benefit and enjoyment." This was in 1872. But ages ago Nature made a wonderland of this territory,—a vast outdoor museum "for the benefit and enjoyment" not only of humankind, but of all living creatures that found their way there. And so the Yellowstone country is not only a great pleasure park for the people, but it is a playground for many creatures. Buffalo, elk, deer, antelope, bear, sheep, and other animals wander freely in the park, and are sheltered there, and no one can molest them. In this particular, mankind has endeavored, so far as possible in this advanced age of civilization, to restore the simple relationship between living creatures that existed, as we are told, in the Garden of Eden.

The great bulk of Yellowstone Park lies in Wyoming, and it consists of a territory 62 miles long and 54 miles wide. When Nature opened up this place she was in an active and interested mood. The whole territory shows that it has been the scene of tremendous volcanic upheavals and startling chemical combinations, the results of which have been the development of a collection of natural wonders that makes the park the greatest show place of "all outdoors." There are to be found within this

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territory geysers of various kinds, boiling springs, terrace and crater formations over which trickles wondrously colored mineral water, deep canyons, hills of sulphur, cliffs of glass, petrified trees, pools of emerald, blue, golden, or of rainbow hues, and all set in scenery of wild and exquisite beauty. The geysers are the largest in the world. The Canyon of the Yellowstone, though not to be ranked in size with the Grand Canyon of the Colorado, surpasses anything of its kind in its marvelously varied coloring.

YELLOWSTONE CANYON
Looking toward Inspiration Point

The wonders of Yellowstone Park are usually "taken in" by the tourist in five days. It is a pity that so many travelers cannot stay longer; for the park is an active show place. It is constantly doing things, and it does some things only once in awhile. Its operations are varied and intermittent. Spend weeks there, as I have done, and you will appreciate this. The star performers in the great natural show place take turn in entertaining you. Today the Giant Geyser spouts. Tomorrow it may be something else. If you go away too soon, you are sure to miss something interesting.

ENTERING THE NATIONAL PARK

You are near the great Continental Divide when you reach Yellowstone National Park. The lowest valley in the park is 6,000 feet above the level of the sea, while the mountain peaks rise from 10,000 to 14,000 feet above sea level. Yellowstone Lake, which is 15 by 20 miles in size,

is the largest American lake at this altitude, and from the waters of Yellowstone Park flow three great rivers,—the Missouri, the Yellowstone, and the Columbia. Our National Park is, therefore, in a sense at the top of our country.

Haynes Photo
MAMMOTH HOTEL AND FORT YELLOWSTONE

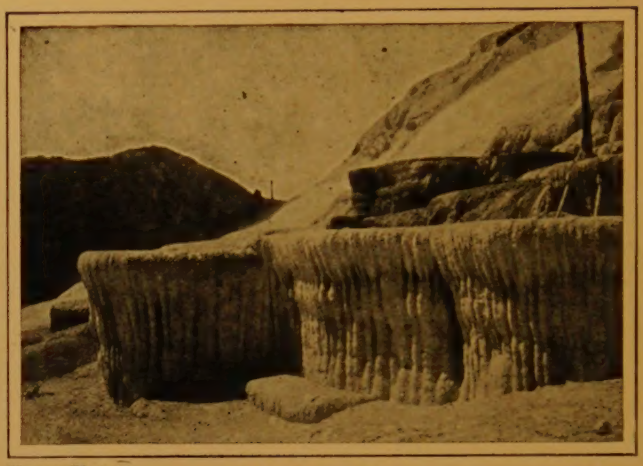
There are three established ways of entering. You may go in from the west, beginning at Yellowstone, which is reached by the Oregon Short Line Railroad, or come down from the north by the Northern Pacific Railroad and enter the park by Gardiner. A third means of approach is by a wagon road running into the park from Cody in the east. Many travelers find the northern route pleasant; though there is not much choice between that and the entrance by way of Yellowstone. If you come down from the north, you will go in by the stone archway that marks the northern entrance. This was built by the government, and dedicated by President Roosevelt in 1903. A five-mile ride brings you to Mammoth Hot Springs and Fort Yellowstone. The fort is a lively, though small, military post for the cavalry companies that police the roads and take care of the park.

Haynes Photo
EAGLE NEST ROCK, GARDINER CANYON

MAMMOTH HOT SPRINGS

The Mammoth Hotel close by Fort Yellowstone is convenient to the boiling springs and terraces that occupy a number of acres at the slope of what is called Terrace Mountain. Soon after arriving you begin to hear the word "formation." All the terraces produced by Mammoth Hot Springs are referred to as "formations." Jupiter Terrace has various styles of "formation." The Pulpit Terrace has a peculiar "formation" of its own. You will quickly get used to it, and will find the word very

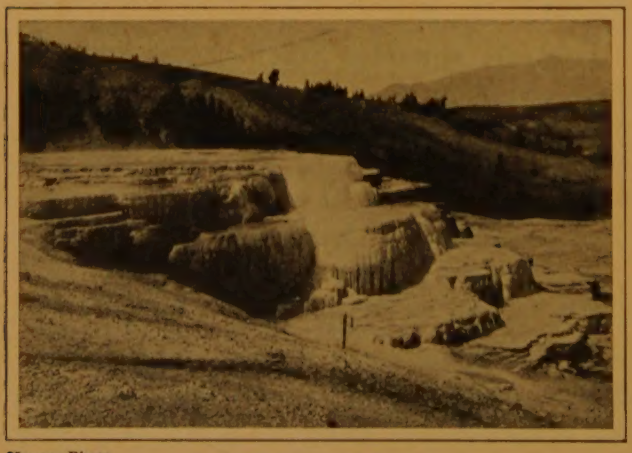
convenient to cover any and all of the amazing shapes and structures created by the action of mineral deposits. These extraordinary terraces are beautiful when "alive"; that is, when the mineral-bearing water is flowing over them. When the water has been checked and changes its course the terraces left dry lose their living colors, grow white as sepulchers, and begin to show signs of crumbling.



Haynes Photo

PULPIT TERRACE

The process of terrace building is very simple and beautiful,—the mineral-bearing water from the boiling springs catches in hollows on the slope of the mountain and forms pools. Then, as the water cools, it makes mineral deposits which take on various shapes as they grow, and on these "formations" the water paints the most dazzling and beautiful colors. No words can describe the exquisite beauty of the terraces. The colors are brilliant and varied, and the rippling water gives them a life and a sparkle that captivate the eye. The coloring is not, as some suppose, produced entirely by mineral deposits. A contributing factor is a minute plant growth called algæ which holds to the rock and thrives in the hot water of the spring. The coloring is due to the reflection and refraction of the light rays effected by the nature and color of the linings of the pool and its surroundings.



Haynes Photo

MINERVA TERRACE

The best known and most beautiful of these "formations" are Jupiter Terrace, Cleopatra Terrace, and Minerva Terrace. The last named has, however, been failing, and betrays evidences of a complete cessation of activity.

GOLDEN GATE AND THE GEYSERS

When you have feasted your eyes to the full on the iridescent-hued ter-

races you will be eager to start south for the Golden Gate and the geyser basins. Fine Concord coaches drawn by four or six horses start briskly off for the park trip, which covers more than 100 miles of sight-seeing. This trip divides itself naturally into two distinct features,—the geyser section, and the lake and canyon section.

On leaving Mammoth Springs Hotel we sweep down the road past Liberty Cap, an extinct geyser crown about 50 feet high. We skirt the terraces and make off for Norris Basin, 20 miles away. The road climbs steadily, so that by the time we reach golden Gate, four miles from Mammoth Springs, we have ascended 1,000 feet, and we go through the great opening to the park at an altitude of 7,000 feet above the sea. This great portal is called the Golden Gate because of the rich yellow moss that covers the rocks. Once beyond the gateway, we look forward to the richest and most interesting section of the park.

VIRGINIA CASCADE

The scenery is superb. Off there lies Electric Peak, called so because of the electric forces that are active about its sides and summit. When we have covered about 12 miles we pass along a great cliff of obsidian which rises 250 feet above the road and presents a glistening front to the rays of the sun. Obsidian is volcanic glass, and has been produced by the cooling of waves of lava. The Indians found it good material for arrowheads. Then the drive follows the shore of Beaver Lake and past Roaring Mountain until it turns into Norris Geyser Basin. Here are a number of boiling pools and geysers of varying action and character. No great geyser is to be found here. We must look for them in the Upper Geyser Section. They serve well, however, to introduce us to the wonders of the geyser springs.

The Black Growler Steam Vent always attracts notice. It makes a great fuss and roars in a most ferocious manner. In contrast to that, Emerald Pool, lying south, is a quiet, placid body of water of pearl-like

UPPER GEYSER BASIN

Tea Kettle. Crater of Giant Geyser. Grand Geyser. Oblong Geyser.

greenish hue. The largest geyser in Norris Basin is the Monarch. It has two oblong openings, and is an eccentric and willful creature, spurting in great explosions at intervals of about six hours. On the road through Gibbon Canyon we get a glimpse of Gibbon Falls, 80 feet high, a beautiful veil of water streaming over rocks.

MIDWAY AND LOWER GEYSER BASIN

The Lower Geyser Basin is a valley taking in 30 or 40 square miles and filled with hot springs and geysers. The Fountain Hotel is the headquarters for this section, and from there visits are made to the Fountain and Great Fountain Geysers, and the Mammoth Paint Pots. Among the many things to be seen in the park, the Paint Pots seem to cling tenaciously to the memory. It is not that they are so wonderful, but rather that they are so queer. Here are mammoth caldrons filled with soft mud, out of which rise little spouts of pink, white, and yellow mud. The shapes they take are grotesquely odd. An imaginative observer is held fascinated, waiting to see what shape will spout up next.

Haynes Photo

EMERALD POOL

In Midway Geyser Basin, which is four miles beyond, the three features are Excelsior Geyser, Prismatic Lake, and Turquoise Spring. The Excelsior Geyser is on the west bank of Firehole River, in a great pit, and when it is at work it tosses the water tumultuously into the air anywhere from 75 to 250 feet. It was in full operation in 1881 during the fall, after the tourist season was over. Then it became busy again in 1888. Only a few have been fortunate enough to see the Excelsior in full operation.

Haynes Photo GIBBON FALLS

Turquoise Spring is a beautiful blue pool of water. And Prismatic Lake, which lies near Excelsior Geyser, is a wide pond whose depths are filled with rainbow hues. From the Lower Basin the road runs past Morning Glory Spring and Riverside Geyser, where it crosses the Firehole River and turns into the territory known as the Upper Geyser Basin.

Haynes Photo OLD FAITHFUL INN

UPPER GEYSER BASIN

In this basin the greatest geysers are to be seen. The basin itself covers a space of about four square miles, and in that area are to be found 26 geysers and 400 hot springs. Through the basin runs the Firehole River, and at the most interesting point is situated Old Faithful Geyser and Old Faithful Inn. This inn is an attractive structure, built of logs and blocks of stone, and constructed throughout in a style appropriate for its setting. All hotels in the park are good, and each has a certain quality and flavor of its own. But hotel life is not an essential part of the trip. Many go tramping and camping along the way. Full outfits for camping are supplied at the Mammoth Springs Hotel, and people who prefer to follow the simple path are encouraged and assisted.

Old Faithful Inn looks out upon an active spectacle. A few hundred

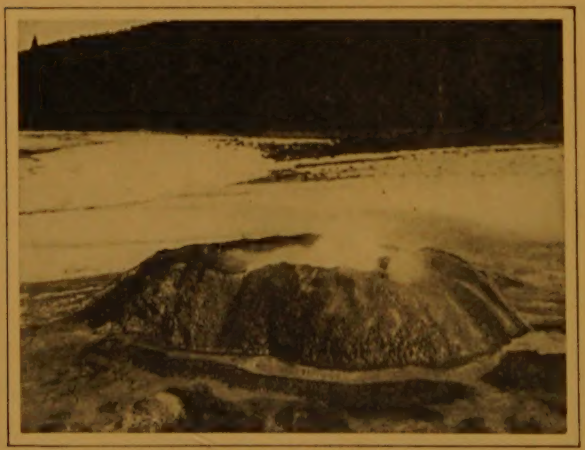
feet away Old Faithful Geyser plays his steady and reliable part. He is a splendid old spouter, and as faithful as his name. About every 65 minutes,—there is hardly a variation of five minutes,—day and night, summer and winter, Old Faithful makes his display. Like the beat of a pulse, and almost with the regularity of a clock, he has been keeping time through the ages. No doubt he was marking the hours before mankind invented the measure of time.

Haynes Photo CASTLE GEYSER

Then there is Giant Geyser, which plays 250 feet in the air for an hour and a half every seven to 12 days. That is the highest geyser in the world. The Beehive Geyser (called by that name because of the shape of its cone) is almost directly in front of Old Faithful Inn. The Sponge Geyser is another busy affair, with a descriptive name; also Castle Geyser, so called because of its resemblance to "an old feudal castle partially in ruins." Geyser wonders multiply, and the names are lost in the mind of even the most attentive traveler. Books have been written in description of their varying qualities. Suffice it to say that the National Park has over 4,000 boiling springs and more than 100 active geysers.

WHAT IS A GEYSER?

Perhaps the simplest way to make clear the nature of a geyser is to say that it is a hot spring bursting out from under pressure. The great scientist, R. W. Bunsen, describes the action of a geyser as follows: "It is well known that the pressure in water increases with the depth on account of gravity; furthermore, that the boiling point rises with the increase in pressure. The geyser tube, which extends deep into the earth, is filled with water from the higher tracts of land around. The heat comes from the buried masses of lava in the earth not



Haynes Photo SPONGE GEYSER

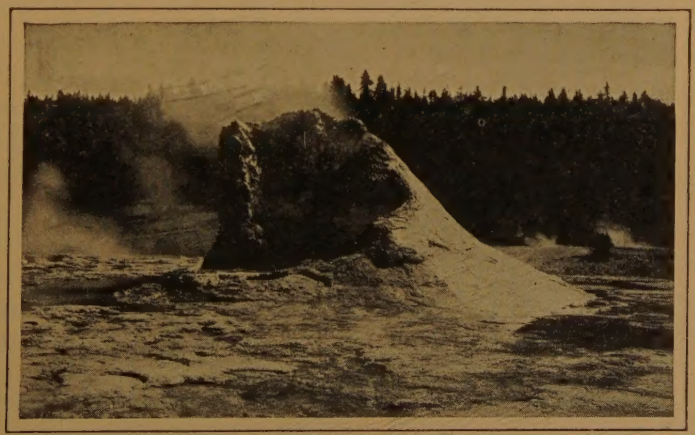
CONE OF LONE STAR GEYSER

yet cooled." The water so heated bursts periodically through its bonds and spouts up into the open air.

YELLOWSTONE LAKE AND CANYON

From Upper Geyser Basin we ride over the summit of the Continental Divide and down to Yellowstone Lake. The distance is 19 miles, and all along the way there is something in sight to arouse interest and give delight,—the Kepler Cascades, laughing and leaping through a rock chasm, Lone Star Geyser, and many beautiful views of lake and mountain scenery. You see Yellowstone Lake first at Thumb Bay. It is a brilliant, sparkling body of water, and so far not enough populated along its shores to have lost its appearance of wild freedom. It lies there in smooth, sunny beauty, surrounded by wooded hills, and at first sight it wins the heart of the most experienced lake explorer. There is plenty to see and plenty to enjoy at Yellowstone Lake,—mountain climbing, driving and riding, boating, fishing, and exploring. The fishing there is famous, especially during the trout season, and the points of interest to entice the visitor are sufficient in number and character to hold him in thrall for weeks.

The great sight, naturally, is the Grand Canyon. It is approached from Yellowstone Lake by a road running up the river about 17 miles. Of course our first instinct in approaching the canyon is to hurry to Grand View or Point Lookout in order to feast our eyes on that ravishing scene of which we have heard so much,—Great Falls and the canyon below. But let us take our time. There is much to see before we gratify our appetite for the crowning sight of all. The Upper Falls is no mean affair in the way of a cataract. It drops 112 feet with great turbulence and foam. Crystal Falls is well worth a visit, and likewise Grotto Pool. Then we grow im-



Haynes Photo

CONE OF GIANT GEYSER

RAPIDS OF THE YELLOWSTONE
Just above Upper Falls, where the canyon begins

patient. Nothing will satisfy us but to hurry on until we find the supreme spot of beauty in the National Park. Let us stand, then, on Point Lookout, 1,200 feet above the river, and take in the full glory of the scene. The falls are 360 feet in height, and they pour through a contracted space of 75 feet down in one splendid, seething white torrent to settle in the riverbed and then float through the canyon in a stream of exquisite emerald green. About us everywhere is color. It seems as if Nature's palette had been exhausted in painting the walls of that wonderful chasm. No words can fully express the beauty of the scene. As in facing the majesty of the Grand Canyon of the Colorado, we surrender speech and gaze upon the wonder in a sort of religious silence. And the same might be said of the whole canyon of the Yellowstone. In all its 20 miles of extent it is one glorious panorama of beauty. I have referred to the coloring. Of all the descriptions of the Canyon that I have read, Dr. Wayland Hoyt's is the most graphic and vivid—especially in its notes on color. "As soon as you can stand it," he says, "go out on that jutting rock and mark the sculpturing of God upon those vast and solemn walls. . . . Almost beyond all else, you are fascinated by the magnificence and utter opulence of color. Those are not simple gray and hoary depths, and reaches and domes and pinnacles of sullen rock. The whole gorge flames. It is as though rainbows had fallen out of the sky and hung themselves there like glorious ban-

Haynes Photo OBLONG GEYSER CRATER

ners. The underlying color is the clearest yellow; this flushes onward into orange. Down at the base the deepest mosses unroll their draperies of the most vivid green; browns, sweet and soft, do their blending; white rocks stand spectral; turrets of rock shoot up as crimson as though they were drenched through with blood. It is a wilderness of color. It is impossible that even the pencil of an artist can tell it. What you would call, accustomed to the softer tints of nature, a great exaggeration would be the utmost tameness compared with the reality. It is as if the most glorious sunset you ever saw had been caught and held upon that resplendent, awful gorge."

Haynes Photo PUNCH BOWL SPRING

It is better, therefore, to begin, as we have done, from the north, and save the canyon for the last; for after that there is nothing that can share its place in our minds. We go back then from the canyon to Norris and take our leave of the park either by the west route through Yellowstone, or by the north route through Mammoth Hot Springs. Our Yellowstone trip has passed like a beautiful dream. It remains with us as a treasured memory.

SUPPLEMENTARY READING

OUR NATIONAL PARKS
By John Muir
1901. Illustrated and finely descriptive.

THE YELLOWSTONE NATIONAL PARK
By H. M. Chittenden
1911. Historical and descriptive.

OFFICIAL GUIDE TO YELLOWSTONE NATIONAL PARK *Compiled by J. E. Haynes*
1912. Descriptive, geological and historical.

THE DISCOVERY OF YELLOWSTONE PARK
By N. P. Langford
1905. A diary with an introduction.

THE YELLOWSTONE NATIONAL PARK
By F. V. Hayden
1883. U. S. Government Report.

BOOK OF A HUNDRED BEARS
1911. *By F. Dumont Smith*

CHRONICLES OF THE YELLOWSTONE
By E. S. Topping

GEOLOGY OF THE YELLOWSTONE NATIONAL PARK *By Arnold Hague*
1899.

THE YELLOWSTONE NATIONAL PARK
By Arnold Hague
Scribner's Magazine, May, 1904.

THE OPEN LETTER

What is the story of Yellowstone Park? It began a hundred years ago, and its crowning chapter was the year 1872.

From all accounts it is likely that the first white man who set foot in the Yellowstone country was John Colter. He was a member of the historic Lewis and Clark Expedition which explored the great northwest and returned to St. Louis in 1806. Colter cut loose and rambled about in the Big Horn valley, reached the forks of the Shoshone River, and worked his way on through part of the Yellowstone region. He was gone four years, and when he turned up again in St. Louis in 1810 he had some big stories to tell of hairbreadth escapes from Indians and of the wonderful sights he had seen. His accounts of geysers and hot springs and boiling pools and so on were not more than half believed. The general attitude towards him was expressed in the term people gave to the wonderland which he described so vividly. They called it "Colter's Hell."

Haynes Photo

GIANT GEYSER

* * *

Colter talked about his experiences, but he left no records. Nothing was written about the Yellowstone region until 1834. Then W. A. Ferris visited the Upper and Lower geyser basins and wrote an account of them. Ten years later some more information was printed, this time from the testimony of a celebrated Rocky Mountain guide, James Bridger. It was Bridger that gave the first account of the glory of Yellowstone lake. After Bridger's time there were several expeditions, each adding their evidence, and by 1863 a strong conviction had become established that the Yellowstone region held a greater number of natural wonders than any other area of equal extent in the world.

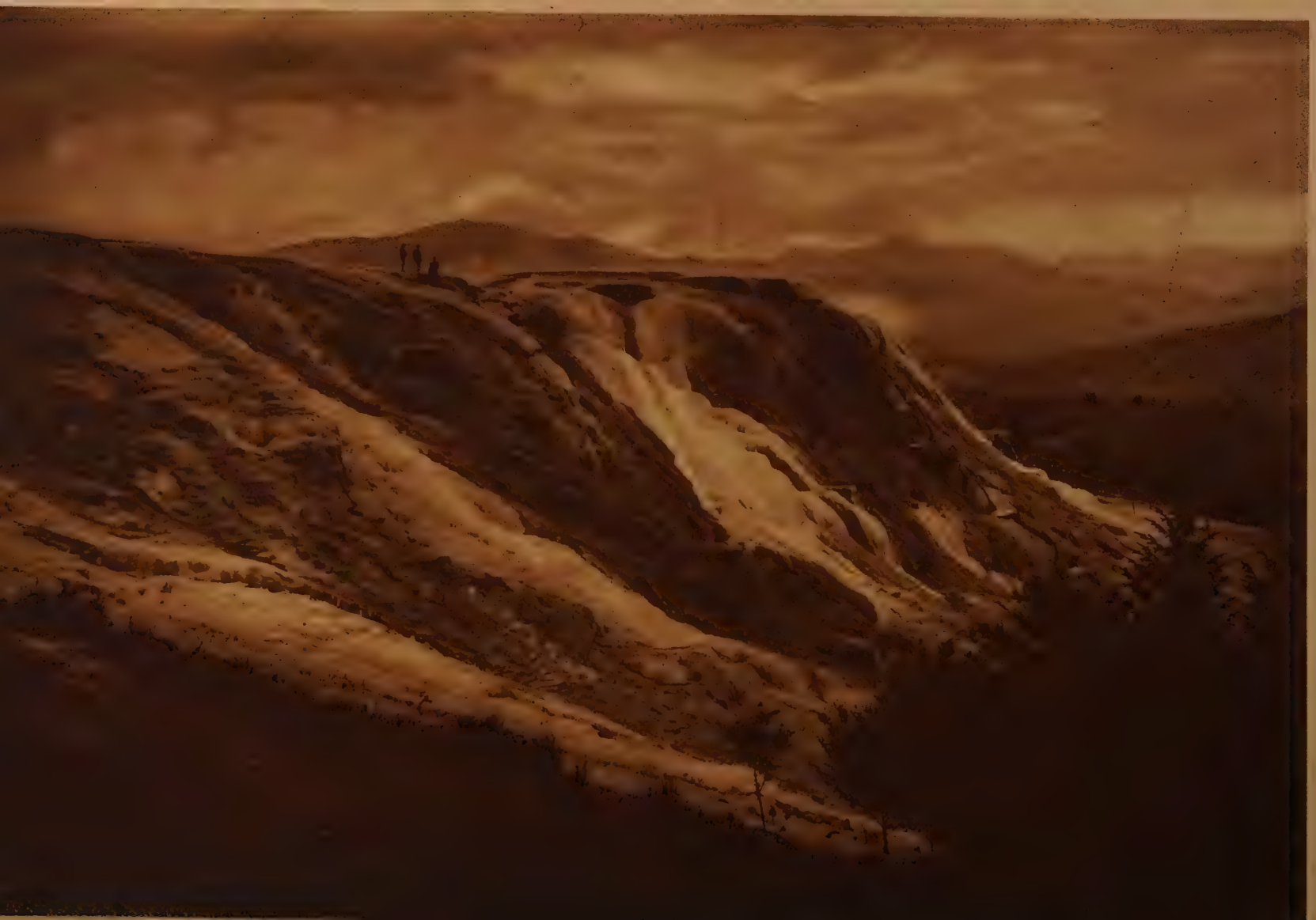
* * *

A private expedition in 1869, conducted by explorers Folsom, Peterson and Cook, was rich in results, especially in facts concerning the Canyon of the Yellowstone, the Great Falls, and the Lake. The story told by Folsom attracted attention, and in 1870 a big party under General Washburn explored the region, passing up the Yellowstone River, traveling completely around the Lake and visiting several of the Geyser Basins. Many of the features of the park were named by this party—Mount Washburn, for example, and Old Faithful, the Castle, Bee-hive, and other geysers. It was the success of the Washburn expedition that led to extensive explorations in 1871 under Dr. Hayden of the U. S. Geological Survey. Dr. Hayden was accompanied by the celebrated landscape photographer Jackson, of Colorado, whose admirable pictures had much to do with building up interest in the project for the National Park.

After that the great riches and the unparalleled wonders of the Yellowstone were no longer a matter of conjecture nor food for imaginative story-tellers. They were in the possession of science. Following close upon the Hayden expedition the region was set aside by Congress, and President Grant placed his signature to the act of dedication in March, 1872.

W. D. Moffat

EDITOR



JUPITER TERRACE, the largest terrace in Yellowstone Park, is the subject of one of the intaglio-gravure pictures illustrating "Yellowstone National Park."

TERRACES IN YELLOWSTONE PARK

Monograph Number One in The Mentor Reading Course

WHEN you drive into the Mammoth Springs Hotel you are dazzled by the riot of light and color about you. It seems to you as if Nature, in anticipation of receiving company, had painted up the landscape in brilliant colors and had set all her fountains going. When you reach the hotel you realize at once that the "show is on," and that it is one of the greatest displays that Nature has in her vast museum. A visitor asks almost at once what these great natural terraces are that revel in color or glisten from whitened surfaces on the mountain slopes. The guide will tell him that they are formations.

"Formations of what?" he will ask.

"Formations of formation," will be the reply. Formation is the material deposited by the overflowing springs whose waters hold in solution carbonate of lime. This is deposited, and builds up gradually until the terrace is made. The beautiful colors in the terraces are made by algæ, a form of plant life which clings closely to the rock.

To examine these natural marvels of nature will take the visitor about three hours of good steady walking. There are 200 acres of terraces. From the floor of the valley they rise up one above the other, some of them hidden in the pines far up the mountainside. The visitor will first make his way over a wide stretch of pure white formation. These are the "dead" terraces; that is, the waters have ceased to flow, and when this happens all beauty and all color disappear.

The first terrace with any coloring is called "The Narrow Gauge." There are a number of little geysers that boil and simmer along its course; but there is one energetic little fellow called the "Baby Geyser" that spouts a powerful column as fat as a pencil to the great height of seven inches.

The terrace above the Narrow Gauge is called the "Orange Geyser." The brilliant coloring of this terrace is greatly admired by everyone. Pulpit Terrace is another masterpiece of nature.

Jupiter Terrace is the largest of all this group. It is 2,000 feet long, and it rises 100 feet in the air.

Minerva Terrace is a mass of deposit 40 feet high. It covers almost three-quarters of an acre, and the hot spring on its summit is 20 feet in diameter, with a temperature of 154 degrees Fahrenheit at the edge. Then there is also Hymen Terrace, one of the most beautifully colored spots in the park. This is a rather new addition to the terraces at Mammoth Hot Springs, and, although it is not so large as Jupiter, it is easily the most exquisitely colored. It is growing fast; but it is feared that the openings may become choked from the abundance of deposit.

Near Minerva Terrace is the Liberty Cap, the cone of an old extinct hot spring. It is 52 feet high, and has built up such a mound that the waters are unable to reach the top and overflow.

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CLEOPATRA TERRACE, YELLOWSTONE PARK

CLEOPATRA TERRACE, one of the most marvelous of formations, is the subject of one of the intaglio-gravure pictures illustrating "Yellowstone National Park."

CLEOPATRA TERRACE

Monograph Number Two in The Mentor Reading Course

CLEOPATRA TERRACE, at Mammoth Hot Springs in Yellowstone Park, is one of the best examples of the growing mineral deposit. It is impossible to describe the beauty of its coloring, which is dark orange. One can only say that it must be seen to be appreciated, and of all times a view of Cleopatra Terrace in the evening, with its soft light, is the best, or when the glow of sunrise reveals its beauty.

It is a rather disturbing thought that if it were not for the United States troops stationed at Yellowstone Park all these beautiful terraces would be mutilated by souvenir hunters. The soldiers watch the formations constantly to prevent tourists breaking off specimens. Still other people like to write their names upon these marvels of nature, and the duty of the soldiers is to prevent this in every possible way.

To aid them in their duty it is required that every visitor in the park must register his name. If a soldier sees a name or even initials written anywhere, he at once telephones to the military government. The lists are gone over, and when the name is found an order for the arrest of the man is made out. Very seldom does the guilty person escape.

Punishment is usually made to fit the crime. For instance, if a person has written his name anywhere, a scrubbing brush and soap are given to him, and he is forced to go back, even if he is a great distance from the scene of his vandalism, to wash his work away with his own hands. It is said that some years ago a young man was arrested at six o'clock in the morning, made to leave his bed, and march without breakfast back several miles to remove the traces of his vanity.

The nearer one approaches the terraces the more he appreciates their beauty. In one place the terraces rise like pulpits; the tapering shafts, like richly decorated organ pipes, seem to hold them up. Side by side with dainty icicles of silver hang golden stalactites. And over all a volume of water gently flows. Well may the visitor exclaim, as one did, "There can be nothing more beautiful on earth!"

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GOLDEN GATE, YELLOWSTONE PARK

GOLDEN GATE, the doorway to Yellowstone Park, is the subject of one of the intaglio-gravure pictures illustrating "Yellowstone National Park."

GOLDEN GATE, THE ENTRANCE TO THE PARK

Monograph Number Three in The Mentor Reading Course

A TRIP through Yellowstone Park usually starts at Mammoth Hot Springs, and the mode of travel is by coach over a distance of 180 miles. Automobiles are not allowed in the park. The larger coaches are drawn by six strong horses. The trip usually takes about four or five days; but it should be done more leisurely.

Shortly after leaving Hot Springs the coach enters a beautiful ravine that forms the inner doorway to Yellowstone Park. This is called Golden Gate, from the color of the rocks, which are tawny yellow.

On emerging from this golden portal there is revealed a broad valley circled by mountains. One of these, with a sharply pointed summit piercing the thin air, is called Electric Peak. It is a sort of huge storage battery, being full of electric forces. This mountain disturbs all engineering instruments, and has a very perceptible electrical effect on all those who climb it.

A turn in the road reveals one of the most wonderful features of the park, a mountain made of glass, which was produced by volcanic fires. It is called obsidian or volcanic glass, and was formed by the rapid cooling of a great wave of lava. It is harder than stone, and in olden time furnished the Indians with excellent arrowheads. To them the mountain was a sacred place. They also considered it neutral ground. All tribes might come there for implements of war, and while there a sacred oath protected them.

This mountain has also been a great source of pioneer stories. One of these tells of a hunter who one day when roaming this valley came upon a splendid elk. He raised his gun and fired; but the elk did not even move. He fired again at closer range. Still the animal was not disturbed. Being an excellent shot, the hunter was exasperated at his seeming failure in marksmanship. He ran toward the elk; but was suddenly stopped by crashing into a vertical wall of glass so perfectly transparent that he had not noticed it. The mountain had acted as a huge telescope, and the elk that he had seen through the mountain was in reality 20 miles away. The marvelous natural conditions of the Yellowstone region offered rich opportunities for wonderful stories—and the pioneers did not neglect them.

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OLD FAITHFUL GEYSER. YELLOWSTONE PARK

OLD FAITHFUL GEYSER, one of the most famous in the world, is the subject of one of the intaglio-gravure pictures illustrating "Yellowstone National Park."

OLD FAITHFUL IN THE UPPER GEYSER BASIN

Monograph Number Four in The Mentor Reading Course

LONG before man decided upon the hour as a unit of time, long indeed before man began thinking of time in units, Old Faithful was counting the hours through the ages. Day and night, summer and winter, this great geyser was spouting every 65 minutes with a regularity that is marvelous to think of.

Old Faithful has always been interesting to visitors because they can be sure of the time at which it is going to erupt, and can therefore be on the watch. In earlier times it was the custom for some impatient ones to "grease a geyser"; that is, to put soap into the crater to make the geyser spout before its time. This practice is now prohibited; for in the end it will destroy the action of a geyser. The fact that soap would advance the hour of eruption was discovered quite by accident. A Chinese laundryman in the park who had found the hot pools a great convenience in his business, one day mixed his suds in the wrong hole. There was an almost immediate eruption, and, though he excaped by some miracle, his laundry went sailing skyward and was scattered by the winds.

The column of water which Old Faithful sends up is 150 feet high, and it stands there for seven minutes. In these seven minutes more than 1,500,000 gallons of boiling water are shot into the air. In one day this great geyser furnishes more water than would be used by a city of 300,000 people.

There are many other geysers in the upper basin that are almost as interesting as Old Faithful, and one of these is a place called Hell's Half Acre. The name suits it. Over a great gulf of terrifying depth project rough ledges of rock. Far below the visitor can see a lake seething and boiling. For a long time this was not suspected to be a geyser. Suddenly, in 1881, the lake surface was hurled high into the air. This action lasted for some months. Then all was quiet again for seven years. In 1888 it burst forth once more. It seems to take this geyser, which is called Excelsior, about seven years to prepare for its huge eruption.

The Upper Basin is marvelous in the daytime; but at evening, hallowed by the hush of twilight, its beauty is almost indescribable. One traveler writes, "Alone and undisturbed we looked upon a scene unequaled in the world. Around us liquid columns rose and fell with ceaseless regularity. The cooler air of evening made many shafts of vapor visible which in the glare of day had vanished unperceived. No sound from them was audible; no breeze disturbed their steadfast flight toward heaven; and in the deepening twilight the slender, white-robed columns seemed like ghosts of geysers, long since dead, revisiting the scenes of their activity."

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FISHING CONE, an extraordinary feature of Yellowstone Lake, is the subject of one of the intaglio-gravure pictures illustrating "Yellowstone National Park."

YELLOWSTONE LAKE AND THE FISHING CONE

Monograph Number Five in The Mentor Reading Course

WHEN Congress was debating the question as to whether Yellowstone Park should be made a national reservation, one explorer of the region informed that dignified body that there was a lake in the region where trout could be caught and boiled in the same water within a radius of fifteen feet. The representatives burst into roars of laughter; but nevertheless this is strictly true. The Fishing Cone contains a boiling spring, and projects above and is surrounded by the cold waters of the lake. Fishermen used to stand there, and after catching trout in the lake would boil them while still on the hook in the hot spring. This is now prohibited by law; but the Fishing Cone is still there for all visitors to the park to see.

Yellowstone Lake is a fisherman's Paradise. Its waters are simply swarming with fish just waiting to be caught, and naturally Yellowstone fish stories are the most remarkable of their kind. Little exaggeration is needed to color them. One traveler tells how he saw two fishermen catch in this lake in one hour more than 100 beautiful trout weighing from one to three pounds each. The rapidity with which they worked was almost unbelievable. Hardly had the fly touched the water when the hook was snapped, the line tightened, the reel began to spin, and another speckled beauty was added to the catch. Each fisherman had two hooks upon his line, and once both of them had two trout hooked at the same time, landing them amid the applause of their friends.

Another story of Yellowstone Park to which it is difficult to give belief tells about a river into which geyser waters overflow. This hot water rests on the surface. Beneath the layer is the cool water of the river itself. The angler drops in his line, hooks a trout, and, after drawing it up through the hot stratum of geyser water finds, on pulling it out, that it has been boiled to a nicety.

Yellowstone Lake has many attractions for the visitor. In sailing there he will observe a distant mountain whose summit bears a strong resemblance to an upturned human face. This is called the Sleeping Giant, and very appropriately. Age after age he has slept there undisturbed.

A walk on the shore of the lake will also prove of interest. The visitor will at one point suddenly come upon an Indian standing with uplifted arm. After his first momentary start of alarm he will discover that it is only a part of a tree which has been placed upright against a log. This was not carved, but is a freak of nature. In leaving the lake one is forced to turn for a farewell look at this dark, slender figure raising its hand as if in threatening gesture to some unseen enemy.

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GREAT FALLS AND the Grand Canyon of the Yellowstone, are the subject of one of the intaglio-gravure pictures illustrating "Yellowstone National Park."

YELLOWSTONE CANYON AND THE GREAT FALLS

Monograph Number Six in The Mentor Reading Course

IT is appropriate that the visitor to Yellowstone National Park should leave the Grand Canyon of the Yellowstone for the last, that he may go away from the park with a vivid impression of its most stupendous wonder on his mind. In the Grand Canyon nature provides a feast of beauty, and man can but look upon this marvelous creation of color with amazement, with reverence, and with awe.

Point Lookout is about half a mile below the Great Falls. It stands 1,200 feet above the river, and from here may be had the best view of Great Falls and the Grand Canyon of the Yellowstone. The water of the falls drops almost twice as far as that of Niagara; yet from Point Lookout this great cataract appears in miniature. What at this distance seems like a long ribbon of white spray is in reality a powerful stream 74 feet wide and 360 feet long.

It is interesting to know why this great cataract exists at this point, when the rest of the canyon is so cut away by the rushing water of Yellowstone River. Long, long ago the entire region for miles around was a geyser basin. The river was then near the surface. Ever since it has been cutting down the walls of the canyon. This was because the soil was volcanic and decomposed by heat. For this reason it could not resist the constant action of the water. But at the upper end of the canyon there was a granite cliff that held firm, and it is over this that the stream, angry at the stubborn strength of the bluff, leaps to take vengeance on the weaker rock beneath.

A stairway allows the visitor to descend to the very brink of Great Falls, and from here the view will hold him entranced. The water leaps into the abyss with a roar of anger and in one huge flood of brilliant, dazzling foam. The lower part of the falls is concealed by great clouds of mist.

Gazing down the canyon from the bank of the falls, the visitor may see Point Lookout rearing its head a half-mile below. Almost directly opposite, to the right, is Artists' Point, the spot selected by Thomas Moran, the American landscape artist, to paint his famous picture that now hangs in the capitol at Washington. This is only one of the many pictures in which this great painter has tried to catch the color of the crowning marvel of Yellowstone Park,—the Grand Canyon.

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